FARM FACTS

Burdock Production in Saskatchewan

Produced by Saskatchewan Agriculture and Food

Great Burdock, or *Arctium lappa*, is a large biennial plant of Eurasian origin that has been known since the Middle Ages. It should not be confused with a related species, *Arctium minus*, a smaller plant that grows in the wild throughout North America, and is considered an introduced weed, known as Common Burdock.

Great Burdock root is commonly eaten as a vegetable in Japan, where it is known as gobo. Commercial production of roots for medicinal purposes has recently begun in Saskatchewan.

The Plant

Burdock, a member of the Aster Family (Asteraceae) is a robust plant that can grow to a very large size in its second year, often reaching over 2 meters in height. The taproots grow very deeply as well, and may be difficult to harvest.
Commercially, it is typically harvested at the end of the first year, when it is not as long and fibrous, which makes harvesting easier. If left in the field, burdock will develop purple flowers in July of the second year.

Culture

Burdock is fairly adaptable to most soils, but heavy soils will complicate harvesting of the roots. Well tilled soils high in organic matter and with a pH of 6 to 8 are desirable. Although tolerant of moderate dryness and some shade, burdock thrives best in moist soil and full sun. Burdock is easy to grow from seed. Only one named variety, Takinogawa Long, is readily available in Canada, although many others have been selected in Japan for vegetable use.

Burdock can be direct seeded in the field in rows 45 to 90 cm apart, depending on the spacing requirements of the harvesting machinery. The plants are often thinned within the row to 15 cm spacings. About 7 g of seed will plant a 30 m row. Larger plots can be seeded at a rate of 4 kg/ha. The seed should be planted after the soil has warmed up in the spring, around the end of May. It typically takes one to two weeks for seed to germinate. Transplanting is also possible. Irrigation throughout the season may be required in dry sites. Fertility requirements of burdock have not been established in Saskatchewan. Burdock is a good weed competitor, but could also be grown under poly mulch. Preliminary trials at Tisdale and Bjorkdale in 1998 suggest that poly mulch will increase average

root weight somewhat, however, the economic advantage of production under poly mulch has not been well established yet. In general a root weight of at least 225 g is desirable, although a root weight of 400 g has been recorded in Saskatchewan. A dry root yield of 2000 kg/ha is considered good.

Burdock has a very efficient system of seed dispersal and timely seed head removal is essential to control voluntary plant emergence.

Pests and Diseases

Burdock appears to be relatively pest and disease free, although once acreages increase this could change. To date, grasshoppers have been one of the few pests recorded. A mosaic virus has been reported on burdock in Ontario. Transplants grown in greenhouses may be subject to powdery mildew.

Harvesting

Burdock is normally harvested in late fall, although it can be harvested in early spring as well. The roots require much effort to remove them by hand, and mechanical diggers have not always produced good results because they do not go deep enough. Mechanical diggers should be capable of going more than 30 cm in depth. Following harvest, the roots need to be washed and dried. Normally the roots are cut lengthwise into multiple pieces to speed up the drying process. Artificial heat may be desirable as well, as the roots may mold in a humid environment. Temperatures above 40° C should be avoided.

Medicinal Uses

Burdock is known to contain up to 45% inulin, up to 3.5% polyphenols, including chlorogenic and caffeic acid, phytosterols, tannins, about 0.1% volatile oil and many other compounds. The roots of burdock are used as a mild laxative, diuretic, antirheumatic, antibiotic, and to promote sweating. Traditionally it has been used as a blood purifier. Burdock is well known as one of the four ingredients in the herbal "Essiac" formula that is claimed to have antitumor activity. Herbalists are promoting burdock in combination with other herbs for skin problems (eczema, psoriasis), improved digestion and arthritis. Burdock root is slightly bitter and is used in the form of dry root and liquid extracts. Burdock leaves contain antibacterial substances and are used as a poultice for boils and abscesses.

Other Plant Parts

Although the roots are by far the most widely marketable portion of the plant, the dried leaves and seeds have also been used for medicinal purposes. The seeds will not be harvestable until the fall of the second year. The seeds are formed in the burs (hence the name burdock) which have hooked spines. They adhere readily to clothing and are very irritating to the skin, making harvesting very unpleasant. Because of the danger of burdock becoming a weed problem, it is usually harvested before seed production occurs. Seeds are ready for collection in late August or early September.

Related Species

Common or Lesser Burdock, *Arctium minus,* and Cotton or Woolly Burdock, *Arctium tomentosum*, are also found in the prairie region of Canada. These may contain similar medicinal properties, but have not been recommended for commercial production.

Marketing

The market for burdock is limited in North America and growers will need to look for out-of-province buyers. Prices have varied considerably, but in the USA prices for dried roots were often below US$7 per pound in recent years. Prospective growers should grow burdock on a small scale and become familiar with harvesting procedures before growing it on a large scale.

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